



A Monthly Insight into the ICAR-CIRCOT

e - News Letter

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In this Issue >>

Technology Insight

Meetings

Events

Visit of Dignitaries

Upcoming Events

Down Memory Lane

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Director's Desk...

About 30% of the cotton produced in the world is harvested mechanically. Australia, Israel and the USA are the countries where all cotton is picked by machines. Cotton harvesters can be classified as pickers and strippers. Stripper-type harvesters strip the entire plant of both open and unopened bolls along with many leaves and stems. The unwanted material is then removed by special devices at the ginneries. Strippers work most satisfactorily if proper defoliation of the plant is achieved. Picker machines, often referred to as spindle-type harvesters, remove the cotton from open bolls and leave the bur on the plant. The cotton fiber is wrapped around the moistened spindles and then taken off by a special device called the doffer, from which the cotton is delivered to a large basket carried above the machine.

Machine-harvested cotton contains about 12% to 35% trash consisting of leaves, sticks, stems, seed-coat fragments etc. It is important to reduce the trash level, so that quality cotton fibres can be obtained after ginning. In order to reduce the trash level of the mechanically picked cotton, ICAR-CIRCOT has developed cleaning system for processing the mechanically picked cotton before ginning. The pre-cleaning system consisting of the cylinder cleaner, stripper cleaner, stick removal machine, and impact cleaner to bring the trash level to 5-10 % in the machine picked cotton. Recently an on-board cleaner has been developed for on-field cleaning of cotton harvested through machine stripper.

ICAR-CIRCOT has been identified as Agri-Business Incubation (ABI) Centre by ICAR. Launch workshop of ABI was held along with the Institute-Industry Interface meet and signing of the MoU's with stakeholders at ICAR-CIRCOT. I congratulate the medal winners from ICAR-CIRCOT who participated in ICAR Inter Zonal Sports meet.

P.G. Patil



ICAR-CIRCOT, Mumbai



Technology Insight

Development of On-board-Pre-cleaner for Mechanically Harvested Cotton

A 600 mm wide onboard cleaner based on sling off action is designed and developed for on-field cleaning of cotton harvested using cotton stripper. It consists of a 440 mm kicker cylinder for breaking of cotton pods and bracts. Seed cotton along with broken cotton pods and bracts enters the cleaning stage of machine that consists of a saw channel cylinder of 286 mm diameter. Therefrom the cleaned cotton is doffed using a doffing assembly while the uncleaned cotton is further cleaned in a reclaimer having 222 mm diameter channel saw cylinder. The cleaned cotton is blown towards a cotton storage basket attached at the end of the stripper harvester. The onboard cleaner is being optimised for cleaning of the machine stripped cotton.



On-board-Pre-cleaner for Mechanically Harvested Cotton mounted on tractor

Trainings

International Training Programme

Skill Development cum Training Programme on Post-harvest Management and Value Addition of Crop Residues in Nigeria

An In-country training programme on 'Post-Harvest Management and Value Addition of Crop Residues' was organised under the Cotton Technical Assistance Programme (Cotton TAP) for Africa during Feb 23-28, 2016 at Zaria, Kaduna State, Nigeria. This programme was conducted as part of India's commitment to development of African cotton sectors under the aegis of the 2nd India-Africa Forum Summit (IAFS) initiative.

The main objective of the programme was to strengthen the human resources of R&D organisations, capacity building of professionals and development of entrepreneurship in the areas of ginning, cotton quality evaluation and value addition to cotton in Nigeria. A batch of 43 professionals including ginners, spinners, researchers, professors, entrepreneurs, etc. of different Nigerian organizations participated in the training programme. Dr. S. K. Shukla, Senior Scientist and Er. P. S. Deshmukh, Scientist, conducted the programme and interacted with the policy makers of Federal Ministry of Agriculture and Rural Development, Nigeria and Faculties of different departments of Ahmadu Bello University, Zaria to understand their requirements in order to fine tune the future programmes to be undertaken in the Cotton TAP.



Dr. S. K. Shukla, Senior Scientist, Interacting with Nigerian Trainees



Dr. S. K. Shukla, Senior Scientist, Distributing Certificate to Trainees

Training on Quality Evaluation of Cotton

The two batches of Quality Evaluation of Cotton training programmes were organized on 8-12th February, 2016 and 22-26th February, 2016. All the participant are cotton purchasers from various branches of The Cotton Corporation of India Ltd. Both the Training programmes were inaugurated with a welcome address by Dr. P. G. Patil,

Director, ICAR-CIRCOT followed by introductory lectures on cotton post harvest technology including cotton quality evaluation. During the training period participants were made acquainted with instrumental testing of cotton as well as visual grading through series of lectures and demonstrations at various in house labs.



Group photo: Training on Quality Evaluation of Cotton Batch: 8-12th February, 2016)



Group photo: Training on Quality Evaluation of Cotton (Batch: 22-26th February, 2016)

Farmers Training - Post-harvest technology and value addition to cotton

Ginning Training Centre (GTC), Nagpur conducted a training programme for farmers on “Post-harvest technology and value addition to cotton by-produce” during 8-12th February, 2016. Seventeen farmers, participated in the training. The training module dealt with logistics and supply of cotton stalks to industries and in-situ utilization of cotton stalks by compositing for additional remuneration and soil fertility management.



Group photo of farmers training at GTC Nagpur

Meeting

Director's Interactive Meeting

- 1) Dr. P.G. Patil, Director, ICAR-CIRCOT had an interactive meeting on 3rd February, 2016 at Dr. V. Sundaram Committee Room with the Heads of Division, Scientists, Sections in-charges, HO and AF&AO. Director briefed about the discussions in the ICAR Directors' Conference on January 23 – 24, 2016.
- 2) Er. A. K. Bharimalla, Senior Scientist participated as an External Expert Member for ITMC Meeting held at ICAR-

CIFA, Bhubaneswar, Odisha, on 27th February 2016.

3) Brainstorming session at IIT Bombay on 17th February, 2016

Dr. P. G. Patil, Director along with Er. A. K. Bharimalla and Dr. N. Vigneshwaran, Senior Scientists participated in the Brainstorming session organized by Centre for Technology Alternatives for Rural Areas (CTARA) IIT, Bombay and Tata Centre for Technology & Design, (IIT Bombay) to evolve newer ideas for better utilization of cotton stalks, indigenization of high pressure homogenization technology and 3-D printing using nanocellulose. Dr. Suhas Zambre, Prof. Narendra Shah and other faculties from IIT, Bombay participated in this session. An indigenously designed machine for preparation of pellets using the dried leaves collected from the IIT campus was demonstrated to the team to discuss about the ways to increase its efficacy. Also, the team visited the facilities *viz.*, 3-D printers, mini-lath machines and other fabrication setups located at the Tata centre. Further it was decided to invite the IIT experts to the Ginning Training Centre of CIRCOT at Nagpur during the interaction meet with the farmers and pelleting machine manufacturers scheduled for 21st March 2016. Another discussion is planned along with veterinarians / animal nutritionists to find out the scope of using cottons stalks in animal feed.

Events

Launch Workshop of Agri-Business Incubation (ABI) Centre, Institute-Industry Interface Meet and Signing of MoUs with stakeholders

The Launch workshop of the Agri-Business Incubation Centre was held on 5th February, 2016 at ICAR-CIRCOT, Mumbai along with the Institute-Industry Interface meet and Signing of the MoU's with the stakeholders. Shri Suresh Kotak, Chairman, Kotak and Co., Kotal Chemicals Ltd., Mumbai was the Chief guest on the occasion, Dr. S. N. Jha, ADG (PE), ICAR, New Delhi, Dr. S. Sreenivasan, Former Director, CIRCOT, Mumbai and Shri Rajeeb Roy, MD and CEO, Agriplast Tech India Private Limited, Bengaluru, were the Guests of Honour. Prior to the inaugural function all the delegates visited the exhibition hall and the Nanocellulose Pilot Plant facility established at the institute. Dr.P.G.Patil, Director, ICAR-CIRCOT, welcomed all the dignitaries and presented a vivid picture about the Institute's achievements and the services provided to the stakeholders for the betterment of the sector and future plans of commercialization of CIRCOT Technologies.

Two documentary films, one on "ICAR-CIRCOT" and other on "Nanocellulose Pilot Plant" were released by the Chief Guest and shown to the participants. Er. A. K. Bharimalla, Principal Investigator briefed about the ABI project of the Institute. Dr. S. Sreenivasan, former Director, CIRCOT in his address elaborated the journey of CIRCOT in technology generation and commercialization and made a mention of

the issues to be addressed for technology transfer viz., competitive pricing of technologies, bankable technologies profile, and industry specific strategy to shed their reluctance in adoption of developed technologies. Shri Rajeeb Roy MD and CEO, Agriplast, was overwhelmed to see the progress of a public R&D entity like CIRCOT and emphasized that the Research focus should shift from primitive research to cutting edge and relevant research for furtherance of the initiatives of PM of India as Start up India and Make in India. He exhorted scientists by suggesting to behave open mind, venturing, challenging & deviating from established path. Dr. S. N. Jha, ADG (PE), congratulated CIRCOT for establishment of ABI and technology commercialization by signing of MoUs. He emphasized for revenue generation to the tune of Rs. 1 crore and expected that CIRCOT may achieve revenue generation equal to its expenditure at the time of its centenary year celebrations of its establishment in 2024. He stressed that technology selling package is important than pricing of the technology and emphasized that scientist should go for out-of-box thinking and that each completed research project must contain the development of technology, its publication and commercialization and some of them can become part of GoI initiatives like Green India, Mera Gaon Mera Gaurav.

Four publications viz., ICAR-CIRCOT Hindi E-newsletter, ICAR-CIRCOT English E-newsletter, pamphlet on Nano Zinc Oxide Production Technology and brochure on "A Glimpse of ICAR-CIRCOT" were released on this occasion.



Shri Suresh Kotak, Chief Guest of the function giving inaugural address (L to R: Dr.P.G.Patil, Dr. S. N. Jha, Dr. S. Sreenivasan, Shri Rajeeb Roy)



Release of publications viz., ICAR-CIRCOT Hindi E-newsletter, ICAR-CIRCOT English E-newsletter, pamphlet on Nano Zinc Oxide Production Technology and brochure on "A Glimpse of ICAR-CIRCOT"

Seven Memorandum of Understandings (MoUs) were signed between ICAR-CIRCOT and its stakeholders viz., (i) Veermata Jijabai Technological Institute, Mumbai & Lafarge India Private Limited, Mumbai; (ii) M/s. Ramcharan Company Pvt Ltd, Chennai; (iii) M/s. Parksons Dyestuff Industries Pvt. Ltd., Nagpur and Laxmi Govind Paper & Pulp Mill Private Limited, Nagpur ; (iv) M/s Precision Tooling Engineers; (v) M/s. Green Globe, Mumbai; (vi) M/s. Hindustan Unilever Limited, Mumbai and (viii) Shri Irfan Ali, Raichur, Karnataka for commercialization of the technologies and consultancy activities.

Shri Suresh Kotak, Chief Guest of the function in his inaugural address wished the ABI of CIRCOT all success and appreciated the signing of MoUs which indicates the value of science. He explained why constructive disruption is important in scientific breakthroughs and opined that 'kaizen' is imbibed within Indian scientists and appreciated the efforts of CIRCOT scientists. He suggested that all the concerned departments must send their scientists for training in advanced countries for advancement in their skills. The vote of thanks was proposed by Shri V. G. Arude and the function ended with reciting of National Anthem.

Workshop on Official Language

ICAR-CIRCOT organized one day workshop on Hindi official language on 20th February, 2016 for Scientists. Mrs. K.R.Joshi, Senior Technical Officer, delivered the welcome address and followed by the session on **Procedure for Translation**, dealt by Shri. Naresh Kumar, Incharge, Central Translation

Bureau, Navi, Mumbai and Second session was on "**Hindi me kam kyun kare?**" conducted by Dr. Anant Shreemali, Assistant Director, Hindi Teaching Scheme.



Mrs. K. R. Joshi welcoming Shri. Naresh Kumar, I/c Central Translation Bureau, Mumbai



Interaction of CIRCOT staff with Dr. Anant Shreemali, Assistant Director, Hindi Teaching Scheme, Mumbai

Youth Empowerment Summit 2016

GTC of ICAR-CIRCOT had participated in Youth Empowerment Summit held during 31st Jan to 02nd Feb, 2016 organized by Fortune Foundation at Mankapur, Nagpur. The theme of the summit was skill development and self-employment opportunities. Er. Varsha Satankar and her team displayed the process and products developed at CIRCOT.



CIRCOT staff interacting with visitors on the event "Youth Empowerment Summit"

IIEFA (Industries, Innovators, Entrepreneurs, Facilitators and Academia) 2016

Vigyan Bharti Vidarbha Mandal organized IIEFA (Industries, Innovators, Entrepreneurs, Facilitators and Academia) 2016 at VNIT,

Nagpur during 5-7th February, 2016. The theme of the program was inducting indigenous technology for country's growth with focus on MSME's. The program was inaugurated by Dr. Anil Kakodkar, Former Chairman, Atomic Energy Commission of India. GTC of ICAR-CIRCOT participated in the meet and displayed various technologies developed by the institute. Shri. Nitin Gadkari Ji, Hon'ble Union Minister, Ministry of Road Transport and Highways & Shipping, Govt of India visited CIRCOT stall on the valedictory day.



Shri. Nitin Gadkari, Hon'ble Union Minister, Ministry of Road Transport and Highways & Shipping, Govt of India at ICAR-CIRCOT stall



MoU signed with Veermata Jijabai Technological Institute, Mumbai on “Application of nanocellulose in cement, mortar, plaster and concrete synthesis for enhancement of



MoU signed with Lafarge India Private Limited, Mumbai on “Application of nanocellulose in cement, mortar, plaster and concrete synthesis for enhancement of functional, physical and mechanical properties” on 5th February, 2016



MoU signed with M/s. Ramcharan Company Pvt Ltd, Chennai on “Application of Nanocellulose in rubber and allied polymers for enhancement of functional, physical and mechanical properties” on 5th February, 2016



MoU signed with M/s. Parksons Dyestuff Industries Pvt. Ltd., Nagpur and M/s. Nice Papers Limited, Nagpur on “Application of nanocellulose in kraft paper for enhancement of functional, physical and mechanical properties” on 5th February, 2016



MoU signed with M/s Precision Tooling Engineers, Nagpur on “Research & Development of Lint Opener for preparation of samples for cotton quality evaluation “on 5th February, 2016



MoU signed with M/s. Green Globe, Mumbai on “Consultancy in Textile materials for antibacterial treatment” on 5th February, 2016



MoU signed with M/s. Hindustan Unilever Limited, Mumbai on “High quality technical services relating to Analytical techniques especially Textile Testing including specialized tests such as Kawabata Evaluation System” 5th February, 2016



MoU signed with Shri Irfan Ali, Raichur Karnataka on “Microbial method for degossypolization of cottonseed meal” 5th February, 2016

Swachh Bharat



ICAR-CIRCOT staff members undertaking the cleaning activities on 27th February, 2016 in the Institute premises.

HRD Activity

Dr. T. Senthilkumar, Scientist & HRD Co-Nodal Officer, attended Training workshop on “Competency Development for Human Resource Development for Nodal Officers of ICAR” was organized by ICAR-NAARM, Hyderabad, on 10-12th February, 2016.

Invited Lecture

Dr. N. Vigneshwaran, Senior Scientist delivered a lecture on “Freeze Drying of Nanocellulose – Opportunities and Challenges” in LYOTALK 2016 FREEZE DRYING / LYOPHILIZATION conference held on 25th February 2016 at The Westin Mumbai Garden City Hotel, Mumbai organized by UBC Forums.

Conference / Workshops/ Seminars

1) Dr. S. K. Shukla, Senior scientist, GTC attended and presented a paper in International conference on Trends in Industrial and Mechanical Engineering (IC-TIME, 2016) held at Maulana Azad National Institute of Technology, Bhopal during 4-6th February, 2016.

- 2) Dr. Hamid Hasan, Officer In-charge, QE Unit, Sirsa participated in “One Day Cotton Seminar under National Food Security Mission (NFSM) for North Zone” organized by Department of Agriculture, Cooperation & Farmers Welfare, New Delhi and Indian Council of Agricultural Research, New Delhi at CICR Regional Station Sirsa on 8th February, 2016.
- 3) Mrs. K.R. Joshi, Sr. Technical Officer attended Seminar on “Commercialization of language in the wake of globalization”, organized by Shipping Corporation of India Ltd., Mumbai, on 15th February, 2016.
- 4) Shri. G.T.V. Prabu, Scientist, attended the National Workshop on “Plasma Techniques for Textiles” organized by South Indian Textile Research Association (SITRA) Coimbatore on 18- 20th February 2016.
- 5) Dr. Sujata Saxena, Principal Scientist and Dr.A.S.M. Raja, Senior Scientist participated in the “International conference on Denims-A democracy in Fashion” organized by Diagonal Consulting (India) at Indian Institute of Management, Ahmadabad from 19-20 February 2016.
- 6) Mrs. Prachi. R. Mhatre, Technical Officer (Library), attended a National Workshop on “Strengthening and Sustainability of E-Granth” at NASC Complex, New Delhi on 26-27 February, 2016.

Inter-zonal Sport Meet

A team of six staff represented ICAR-CIRCOT at the Inter-Zonal Sports Tournament 2016 at Central Arid Zone

Research Institute, Jodhpur and received the following medals.

Name of the Participant	Game	Medal
Mrs. Smita Paiyala	Carrom	Gold
Mrs. Smita Paiyala Mrs. Vijaya Walzade	Table Tennis (Doubles)	Silver



Mrs. Sumita Paiyala & Mrs. Vijaya Walzade received silver medal (Game: Table Tennis (Women's Doubles))



Mrs. Sumita Paiyala received gold medal (Game: Carrom)

Visit of Dignitaries

- 1) Dr. S.N. Jha, the newly joined ADG (PE) visited the institute and had an interactive discussion with the staff on 5th February, 2016. On 6th February, 2016, he visited the various research facilities established in the institute and interacted with senior level scientists of the institute.



Dr. S.N. Jha, ADG (PE), Interacted with CIRCOT Staffs

2) Dr. Balwinder Singh, Director of Research, Dr. RK Gumber, Additional Director of Research (Crop Improvement) and Dr. GS Butter, Additional Director of Extension Education, Punjab Agricultural University, Ludhiana visited CIRCOT Quality Evaluation Unit, Sirsa on 8th February, 2016. Dr. Hamid Hasan, Officer in-charge, QE Unit, Sirsa welcomed the dignitaries and briefed about the various activities of the regional unit. All the dignitaries keenly observed the working of High Volume Instrument (HVI) and appreciated the technological support extended by unit in varietal development of cotton.



Demonstration of cotton quality evaluation to dignitaries

Students Visit



Students from St. Joseph school, Wadala visited CIRCOT on 24th February, 2016. They were briefed about CIRCOT history and research activities. They also visited Mechanical Processing Division, Fibre Testing, Yarn Testing sections of the Institute (120 Students).



Students from Haryana Agricultural University, Hisar visited QEU's ICAR-CIRCOT, Sirsa on 23rd February, 2016 under "Rural Agricultural Work Experience (RAWE)" programme (36 Students)



Ph.D Students from Centre for Plant Breeding and Genetics, TNAU , Coimbatore visited Quality Evaluation unit, ICAR-CIRCOT Coimbatore on 8th Feb, 2016 (20 students)



Students from University of Agricultural Sciences, Dharwad visited ICAR- CIRCOT on 27th Feb 2016 (94 Students)



Students from B.K. College for Women, Kottayam, Kerala visited Quality Evaluation Unit, ICAR-CIRCOT, Coimbatore on 20th February, 2016 (25 Students)

Upcoming Events

Training programme on Spectroscopic and Chromatographic Techniques for Material Characterization from 2-5th March, 2016

Visit CIRCOT website for More Details:

www.circot.res.in



Ginning Training Centre of ICAR-CIRCOT, Nagpur Inaugurated by Shri. Sardar Buta Singh, Hon'ble Minister for Agricultural and Rural Development on 7th December, 1985. Dr. N. S. Randhawa, Director General, ICAR, Dr. M.V. Rao, Deputy Director General, ICAR, Dr. C. Kempanna, Assistant Director General, ICAR, Dr. N. S. Bhale, Director, Central Institute for Cotton Research, Nagpur, Dr. V. Sundaram, Director, CTRL, Dr. G.R. Anap, Officer-in-charge and other dignitaries are seen.



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